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ABSTRACT

To compare the effects of two different comprehension treatments on the reading of university students enrolled in a developmental reading laboratory, 74 students were administered pretests measuring reading achievement and reading attitudes and were given five weeks of instruction in text organizing strategies and vocabulary development. After receiving a critical thinking pretest, students were randomly assigned to one of two comprehension treatment groups. The first group used T. G. Thurstone's Reading for Understanding Program, kits 2 and 3, which emphasizes inferencing skill, while the second group used the Jamestown Comprehension Skill Series, which depicts reading comprehension as subsystems of nine skills. When the comprehension treatments ended in the twelfth week of the study, the students were administered posttests measuring reading achievement, critical thinking ability, and reading attitudes. Test results indicated that the two commercial programs were equally effective in improving student reading ability and related skills. (HOD)

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Effects of Two Comprehension Treatments in a College Reading Laboratory

Research Report

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Effects of Two Comprehension Treatments in a College Reading Laboratory

The basis of this study has both theoretical and practical considerations. The comprehension treatments under investigation are premised on the idea that comprehension in reading exists as a series of subsystems to be mastered (Davis, 1968, 1978), and, that these subsystems, in an instructional sense, are built on levels which get progressively more sophisticated (Bloom 1956, Smith and Barrett 1979). Practically speaking, the study stems from research by Heerman (in press) in which significant gains in vocabulary and total reading achievement were reported for an experimental group when reading gains were compared to those of a matched control group. The exception to these findings was that the two groups did not differ significantly in reading comprehension. A second practical consideration, that instruction was limited to the use of generic or commercial reading programs, has then caused me to focus on the worth of two major commerical comprehension kits. While it may be argued that comprehension instruction and research is more relevant using general, content-based instructional strategies, reality tells us that, "Separate remedial, basic courses are historically the most widely used structure for learning improvement programs" (Keimig, 1983, p. 20). Hence, the results of this research were thought to have applicability in the latter type programs.

The Study

Overview

The purpose of this study was to compare the effects of two different comprehension treatments on the reading of university students enrolled in a 16-week course, Developmental Reading Laboratory. Effects of the comprehension treatments were measured by tests of: 1) reading vocabulary 2) reading comprehension 3) critical thinking ability 4) reader attitude.

Comprehension Treatments

Drawing Inferences. Thurstone's (1978) Reading for Understanding (RFU) program (Kits 2 and 3) provided one of the two treatments. The range of difficulty for the two kits together, appears to span reading levels 3.0 to 14.0 (p. 7). This program consists of 600 task cards arranged at ever-increasing levels of difficulty. The task requires that the student read a short paragraph and select one of four answers which accurately completes the thought of the paragraph. Since none of the answers is derived from recall of explicitly-stated information, the program appears to foster the comprehension subskill of "inference." Davis (1968, pp. 542-543) reported that reading comprehension was not a unitary skill, but was more accurately conceived of as subsystems of different skills. Davis reported that the subskill of inference was very important, and, that students should be called upon to draw inferences from materials they read for comprehension.

Multilevel Subsystems Concept. The second series, the Jamestown Comprehension Skills Series (Williston, 1974, Giroux and Williston 1974, Giroux and Twining 1974) depicts reading comprehension as subsystems of nine skills, Ostensibly, this comprehension subskill kit is to be used

selectively with students who are having difficulty in other materials. For example, if a student is thought to be having trouble answering main idea questions in other material, the student is given practice in the Jamestown Comprehension Skills Series, "Understanding the Main Idea." This series more fully acknowledges Davis' model of comprehension as subsystems of different skills, whereas, the RFU program views depicts comprehension as a unitary skill.

In addition to viewing the Jamestown Series as a subsystem concept, we further conceptualized it as a multilevel series in which each subsequent subskill requires increased sophistication in the reading-thinking process (Bloom 1956, Smith and Barrett 1979). For the purposes of this study we selected six of the nine subskills from the series and these are depicted below in what we estimated to be an ascending order of sophistication:

Isolating details and recalling specific facts. This involves recalling a single detail from among many and recalling from memory, a certain fact.

Retaining concepts and organizing facts. This involves remembering general ideas and arranging facts, details and events into a meaningful whole.

Understanding the main idea. Here, the student must be able to state the most important idea in a paragraph.

Making an inference. The student must reach a decision beyond what the writer actually says.

Drawing conclusions. Here the student must make the only decision possible.

Making a judgment. The student must reach a sound conclusion based on facts.

The Jamestown Series is organized into two kits, each of which contains the same set of skills. The first is deemed appropriate for reading levels 4.0 through 8.0, and, the second is considered appropriate for reading levels 8.0 through 12.0. Each skill is presented in booklet form. The first half of each booklet defines and explains the skill, while the second half provides thirty practice exercises in the skill. A practice exercise requires reading a passage composed of brief paragraphs and answering four accompnaying questions. Each booklet includes an audio cassette which contains the complete narrative for the book.

Method

Subjects and Test Instruments. All subjects were enrolled in the campus reading program and were full-time students. Forms E and F of The Nelson-Denny Reading Test (Brown, Bennett & Hanna, 1981), provided pre- and post-test measures of vocabulary, comprehension and total reading achievement. Total scores from Forms A and B of the Watson-Glaser Critical Thinking Appraisal (Watson and Glaser, 1980), provided pre- and post-test measures of critical thinking. Pre- and post-test measures of reading attitude were made by administering and readministering the Kansas State Reader Attitude Scale (Anderson, et. al., 1983).

Procedure. All subjects were administered Form E of The Nelson-Denny and the attitude scale at the start of the semester. Next, all students were taught text organizing strategies and were instructed in vocabulary. Text reading strategies for comprehension and practice in vocabulary materials continued through the end of the fifth week. At

the beginning of the sixth week, all subjects were pre-tested with Form A of the Watson-Glaser and were randomly assigned, by class, to one of the two comprehension treatments. The RFU group had 38 subjects while the Jamestown group had 36 subjects. The 74 subjects were enrolled in five classes taught by four instructors. Instructors taught both comprehension treatments within each class.

Subjects in the RFU group completed an average of 45 levels of task cards. They were able to do so in an efficient manner as the task was singular and repetitive with students being challenged by working into higher level cards. In contrast, the Jamestown group completed an average of 60 practice exercises, with each subject completing a minimum of five exercises per skill book. This program was more complicated and, therefore, less instructionally efficient. Multiple skills were involved and student competence varied among these skills. Instructors introduced each student to the series and asked each to work five practice exercises in a skill book. If student scores ranged from 80% to 90% and the student stated that the skill was quite easy, further practice was terminated in the skill. The two lower level skills dealing with details/facts and concepts/facts, for the most part, posed few problems.

Student emphases varied across the remaining four skills, although main idea received the greatest student work effort. Typically, if a student was able to master one of the three skills of inference, conclusion or judgment, the remaining skills could be mastered by working one-third of the exercises per skill book. If there was doubt, student mastery of a skill was verified by having the student work 3-5 exercises at the end of the sequence of thirty exercises.

In the twelfth week the two comprehension treatments were ended and all subjects were administered Form B of the Watson-Glaser. In the fifteenth week all subjects were administered Form F of The Nelson-Denny and were readministered the reader attitude scale. Pre-post-test measures of vocabulary, comprehension, total reading achievement, and reader attitude encompassed the entire course, Hence, they were thought to measure the total effects of the reading class. Critical thinking measures included only the period of the two treatments and were taken to be measures of the effects of the comprehension treatments only. Data analysis was done by a repeated measures analysis of variance (ANOVA) comparing the two groups by the five pre-post-test measures.

Results and Discussion

Results

Table 1 shows summary data for the ANOVA's on the five measures for the two groups, while Table 2 reports the mean, standard deviation, and

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Insert tables 1 and 2 about here

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difference scores. None of the group effects was significant except in the case of reader attitudes. This was due to the Jamestown group's having a much lower mean pre-test score than that of the RFU group. Test effects reveal significance on all five measures, a finding which suggests that the total effects of the reading class on vocabulary, comprehension, total reading achievement, and reader attitude were successful. Similarly, the specific effects of the two treatments on critical thinking ability were also successful.

However, when the two treatments were compared the ANOVA reveals

that the RFU program did not differ significantly from the Jamestown program in eliciting gains in critical thinking ability. Likewise, neither program proved superior to the other in contributing to the total impact of the lab as evidenced by the lack of significant differences from the comparison of treatments on the remaining four measures.

Discussion

The two commercial comprehension kits compared herein appear to be equally effective in improving student reading ability and related skills. Of interest is the fact that the singular skill area of inference in the RFU program seemed to equal the subsystems of comprehension skills embodied in the Jamestown program. One cannot conclude, however, that there exists a single comprehension skill which subsumes the subsystems of comprehension skills. The limitations of the tests used in this study alone prevent such a conclusion.

From the viewpoint of efficiency, however, the RFU program is clearly the superior of the two programs for two reasons. First, the RFU program costs about one-half that of the Jamestown series to purchase and maintain. Second, the RFU progam is instructionally more economical. The program moves faster and a complete instructional sequence can be completed in a relatively short time. Certainly, it could be argued that the Jamestown group might have scored higher had the students been able to compelte more of the practice exercises. Such an argument, unfortunately, goes beyond the limits of this study, but, does serve to reiterate the efficiency findings in favor of the RFU program.

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Table 1

Summary Table for ANOVA's

n = 74

Source	df	MS	F	p
Group				
Vocabulary	1	3.52	.006	.94
Comprehension	1	203.58	.83	.37
Total reading	1	131.41	.09	.76
Critical thinking	1	42.75	.24	.62
Attitudes	1	805.44	5.11	.03
Pre-post-test				
Vocabulary	1	418.93	7.74	.007
Comprehension	1	2979.02	45.12	.001
Total reading	1	5768.76	38.16	.001
Critical thinking	1	254.10	7.98	.006
Attitudes	1	5067.27	99.50	.001
Group X Pre-post-test				
Vocabulary	1	9.90	.18	.67
Comprehension	1	3.26	.05	.83
Total reading	1	.17	.001	.97
Critical thinking	1	2.01	.06	.80
Attitudes	1	123.97	2.43	.12

Table 2

Mean, Standard Deviation, and Difference Scores

	RFU (n = 38)			Jamestown (n = 36)		
Variable	$\bar{X}$	SD	Diff.	$\bar{X}$	SD	Diff.
Vocabulary pre-	50.37	19.10		51.19	16.30	
Vocabulary post-	54.24	17.09	3.87	54.03	19.38	2.84
Comprehension pre-	41.42	12.35		38.78	13.35	
Comprehension post-	50.11	11.61	8.69	48.06	12.54	9.28
Total Reading pre-	91.80	29.39		89.97	27.10	
Total Reading post-	104.34	25.94	12.54	102.39	28.73	12.42
Critical thinking pre-	52.45	12.46		51.14	10.65	
Critical thinking post-	54.84	8.37	2.39	54.00	8.57	2.86
Attitude pre-	78.53	9.64		72.03	12.07	
Attitude post-	88.45	9.00	9.92	85.61	9.97	13.58